Imperial College London

Disentangling 3D Attributes from a Single 2D Image: Human Pose, Shape and Garment





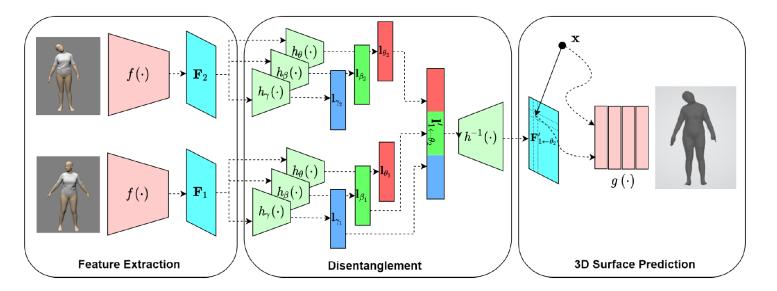


Xue Hu¹, Xinghui², Benjamin Busam³, Yiren Zhou⁴, Ales Leonardis⁴, Shanxin Yuan⁴

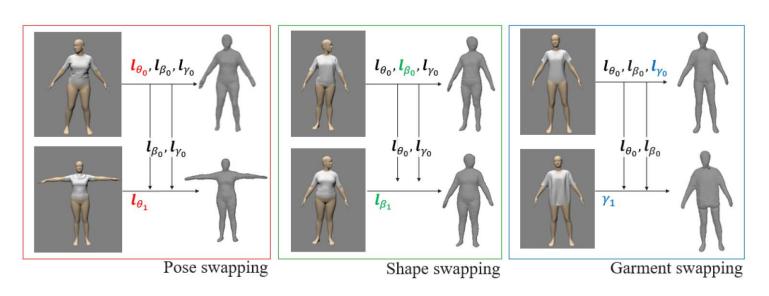
- 1. Imperial College London, 2. University of Oxford,
- 3. Technical University of Munich, 4. Huawei Noah's Ark Lab

*equal contribution

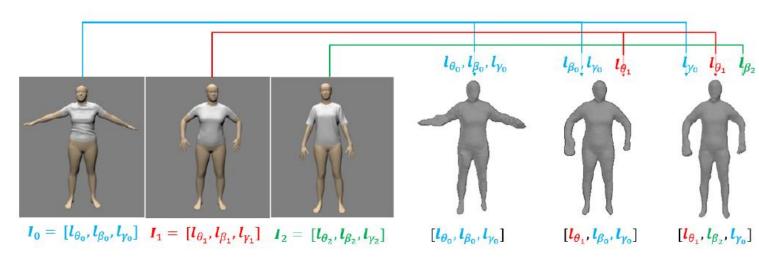
Architecture of our method



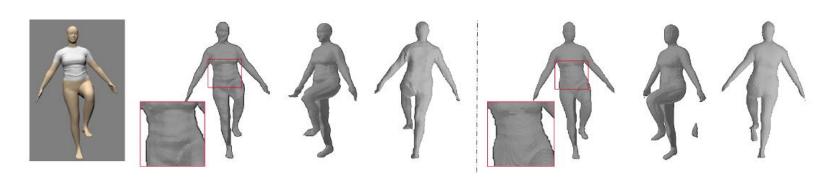
Example results of surface reconstruction



Example results of surface reconstruction after uncontrolled swapping of both body pose and shape



Comparison of direct reconstruction using SDF and occupancy



Experiment	Implicit Func	Chamfer (mm)	P2S (mm)	normal (mm)
self	SDF/OCC	1.43 /3.65	11.21 /22.24	11.16/ 8.93
cross - pose	SDF/OCC	1.26 /4.73	12.12 /21.63	10.63/ 8.72
cross - shape	SDF/OCC	2.46 /3.09	12.25 /19.88	11.46/ 9.28
cross - garment	SDF/OCC	1.26 /3.36	9.35 /22.61	11.53/ 8.86

Table 1: Reconstruction error (median) after swapping the latent code of body shape, pose and garment style, using SDF and occupancy.

